

CLAIMS

What is claimed is:

1. A method for wireless mobile unit communication within a wireless network having geographic areas for preferred communication usage, comprising the steps of:

determining an estimated geographic location of a mobile unit; and
providing the mobile unit with relative position data of at least one preferred communication area relative to the determined mobile unit estimated location.

2. The method of claim 1, further comprising the steps of:
initiating a request for a pre-designated preferred communication area location by the mobile unit transmission; and
receiving the request by a network base station.

3. The method of claim 2, wherein the mobile unit is equipped with a global positioning system (GPS), the mobile unit estimated location is determined by using the mobile unit's global positioning system (GPS), the mobile unit request transmission includes current mobile unit estimated location data, and the network base station transmits to the mobile unit relative position data that is determined by the network based on the current mobile unit estimated location data.

4. The method of claim 3, wherein the relative position data transmitted by the network base station to the mobile unit is determined by the network, based on the current mobile unit estimated location data and dynamic data of preferred communication area usage.

5. The method of claim 2, wherein a current mobile unit estimated location is determined by the wireless network analyzing data related to physical properties of the mobile unit request transmission and the network base station transmits to the mobile unit relative position data that is determined by the network based on the current mobile unit estimated location data.

6. The method of claim 5, wherein the relative position data transmitted by the network base station to the mobile unit is determined by the network, based on the current mobile unit estimated location data and dynamic data of pre-designated preferred communication area usage.

7. The method of claim 2, wherein the mobile unit is equipped with a global positioning system (GPS), the mobile unit estimated location is determined by using the mobile unit's global positioning system (GPS), the network base station transmits to the mobile unit geographic location data of all network pre-designated preferred communication areas serviced by the base station, and relative position data is determined by the mobile unit.

8. The method of claim 2, wherein the network permits direct mobile unit wireless communications with network base stations and also peer-to-peer wireless communications between mobile units and wherein the request initiated by the mobile unit and received by the network base station is relayed via a different mobile unit located in a pre-designated preferred communication area serviced by the base station.

9. The method of claim 1, wherein the network monitors determined mobile unit estimated locations and relative position data is periodically

transmitted to the mobile unit that is determined by the network, based on current mobile unit estimated location data and dynamic data of network usage.

10. The method of claim 1, wherein the mobile unit is equipped with a global positioning system (GPS) and the mobile unit estimated location is determined by using the mobile unit's global positioning system (GPS).

11. The method of claim 1, wherein relative position data is determined by the network based on the determined mobile unit estimated location data and dynamic data of network usage data such that a ranked preference order of preferred communication areas is determined and relative position data at least a first preferred communication area preference is transmitted by a network base station to the mobile unit.

12. The method of claim 1, further comprising the steps of:
defining preferred communication areas by respective sets of geographical coordinates;
storing said coordinate sets in a network database; and
selectively transmitting from a network base station one or more of the data sets to provide the mobile unit with relative position data.

13. The method of claim 1, wherein the mobile unit is equipped with a map display, the method of further comprising the step of using relative position data to display hot spot areas relative to the estimated mobile unit location and relocating the mobile unit to a preferred communication area based on the relative position data.

14. A mobile unit for communication within a wireless network having geographic areas pre-designated for preferred communication usage, comprising:

a transmitter that is configured to initiate a request for a pre-designated preferred communication area location when the mobile unit is not within a hot spot area of the network;

a receiver configured to receive geographic location data corresponding to at least one pre-designated preferred communication area serviced by the network; and

a user output device for alerting a mobile unit user of the relative position of at least one pre-designated preferred communication area serviced by the network to a determined mobile unit estimated location.

15. The invention of claim 14, further comprising a global positioning system (GPS) that determines an estimated location of the mobile unit, wherein the transmitter is configured to transmit the pre-designated preferred communication location request by transmitting a signal that includes current mobile unit estimated location data, and wherein the mobile unit receiver is configured to receive geographic location data corresponding to at least one pre-designated preferred communication area in the form of relative position data that is determined by the network based on the transmitted mobile unit estimated location data.

16. The invention of claim 14, wherein the mobile unit receiver is configured to receive geographic location data corresponding to at least one pre-designated preferred communication area in the form of relative position data that is determined by the network, based on a mobile unit estimated location determined by the wireless network analyzing data related to physical properties of the mobile unit request transmission.

17. The invention of claim 14, further comprising a global positioning system (GPS) that determines an estimated location of the mobile unit and that calculates relative position data based on geographic location data corresponding to at least one pre-designated preferred communication area serviced by the network received in response to a transmitted request.

18. The invention of claim 14, wherein the mobile unit is configured for direct communication with network base stations and also peer-to-peer wireless communications with other mobile units and wherein the mobile unit receiver is also configured to receive a response to a transmitted request via a relay from another mobile unit in direct communication with a network base station.

19. The invention of claim 14, further comprising a map display configured to visually display pre-designated preferred communication areas relative to the estimated mobile unit location.

20. The invention of claim 14, wherein the mobile unit is configured for wireless communication in a wireless local area network (WLAN).

21. The invention of claim 14, wherein the mobile unit is configured for wireless communication in a time division duplex (TDD) telecommunications system.

22. The invention of claim 14, wherein the mobile unit is configured for wireless communication in a frequency division duplex (FDD) telecommunications system.

23. The invention of claim 14, wherein the user output device for alerting a mobile unit user of the relative position comprises a power use indicator that is active when the mobile unit is not physically located in a pre-designated preferred communication area where power consumption is relatively high.